

NATIONAL ACADEMY OF OSTEOPATHY

Osteopathic Approach to Insomnia

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Introduction

Sleep disorders are in the centre of current public health concerns as it is largely shared amongst people in modern society. One of the most common types of sleep disorders is insomnia, the condition that involves difficulty initiating sleep, difficulty maintaining sleep, or difficulty obtaining restorative sleep with associated daytime dysfunction or distress due to the lack of sleep (American Psychiatric Association, 1994). Sleep disorders should not be overlooked as it is associated with significant health problems including reduced quality of life, work productivity as well as overall mental health. Insomnia is caused by a variety of physiological, psychological and environmental factors. Pharmacologic intervention with benzodiazepine and benzodiazepine agonists is most commonly used to treat insomnia. However, the use of these drugs has been consistently shown in the studies that it carries severe side effects of dependency and withdrawal symptoms, and only effective in the short term. Therefore, Osteopathy treatment can be more effectual in terms of targeting the underlying problem while providing a safe and natural treatment. Osteopathy is a manual medicinal treatment that aims to provide a beneficial effect on the body as a whole which puts emphasis on the overall health of body's nervous, circulatory and lymphatic systems. Osteopathy has numerous treatment methods; Soft Tissue Therapy, Osteopathic Articular Techniques, Muscle Energy Techniques and Visceral Manipulation Cranial Osteopathy. Each treatment is comprehensively practiced based on the patient's health condition.

Insomnia

It is proven that insomnia has a high prevalence in society; although numbers may vary,

approximately two-thirds of adults experience one or more episodes of insomnia each year, and approximately 15% of adults have a serious chronic episode per year (Carney P., Berry R., Geyer J. Lippincott Williams & Wilkins, 2015). According to National Sleep Foundation (NSF) survey poll in 2005, more than half of respondents have experienced sleep problems such as difficulty falling asleep, waking up a lot during sleep time, not being able to get back to sleep after waking up, or waking up with unrefreshed feeling on a regular basis (Carney P., Berry R., Geyer J. Lippincott Williams & Wilkins, 2015). Moreover, it is found that the number of people suffers from sleep disorders have been increasing consistently each year and the year 2005, a large majority of people (75%) have reported having had at least one symptom of a sleep problem regularly. (Figure 1)

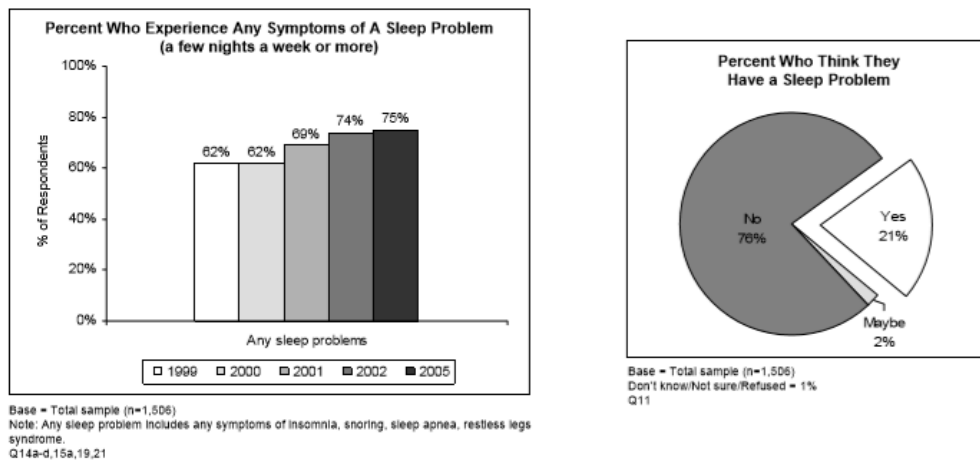


Figure 1

It is relatively difficult to detect a root cause of insomnia due to its nature of complexity of causes and symptoms. In order to successfully identify, the patient’s physiological, psychological and environmental conditions should be collectively examined. Therefore, many medical professionals have argued that insomnia has a significant correlation with chronic pain

conditions such as chronic low back and chronic neck pain. According to R. Gregory Lande, DO, a board-certified psychiatrist, insomnia is considered a persistent condition because it is subject to frequent recurrences (Lande, 2010). Therefore the patient's physiological, psychological and environmental conditions should be collectively examined. Insomnia is also associated with daytime effects such as depression, anxiety, fatigue, irritability, reduced memory, and concentration. There is a popular misconception that insomnia is merely due to the mental state, however many scholars further link insomnia to physical chronic pain conditions, "Women, older adults and people with physical or emotional difficulties tend to suffer most from insomnia" (Lande,2010).

The significant risk factors for insomnia include:

- stress and anxiety
- pain, such as back pain
- frequent urination/urge to urinate at night
- arthritis
- asthma
- restless leg syndrome
- digestive problems
- allergies or respiratory conditions
- working nights or shift work
- alcohol and drug use
- neurological conditions, such as Parkinson's disease

- certain medications, including antidepressants, psychostimulants, anticonvulsants, decongestants, steroids and dopamine agonists

Several well-identified risk factors for insomnia were reported by the State-of-the-Science Conference in June 2005. Age and gender are the most clearly identified demographic risk factors, with an increased prevalence in women and older adults. While the cause of this increased risk in the elderly is not well defined, it may be due to the partial decline in the functionality of sleep control systems that may contribute to insomnia in this older population. Importantly, the presence of comorbid medical conditions is also a significant contributor to the increased prevalence of insomnia in the elderly. In women, insomnia is more prevalent with both the onset of menses and menopause. It is crucial to recognize that these factors do not independently cause insomnia, but rather they are precipitants of insomnia in individuals predisposed to this disorder. In fact, chronic illnesses are a significant risk for insomnia. It is estimated that the majority of people with insomnia (approximately 75%–90%) have an increased risk for comorbid medical disorders, such as conditions causing hypoxemia and dyspnea, gastro-esophageal reflux disease, pain conditions, and neurodegenerative diseases. Moreover, a variety of primary sleep disorders as well as circadian rhythm disorders are frequently comorbid with and often lead to insomnia. Among the primary sleep disorders, restless legs syndrome (RLS), periodic limb movement disorders (PLMD), and sleep-related breathing disorders (snoring, dyspnea, sleep apnea) often present with an insomnia symptom and this is especially applicable among the elderly. Among younger individuals, difficulty falling asleep is often associated with a sleep phase delay syndrome. However, in the elderly, phase advance syndrome results in reports of difficulty initiating sleep, maintaining sleep, and experiencing early morning awakenings. The most common comorbidities associated with

insomnia are psychiatric disorders. It is estimated that 40% of all insomnia patients have a coexisting psychiatric condition (Ford; Kamerow, 1989). Among these psychiatric disorders, depression is the most common, and insomnia is a diagnostic symptom of depressive and anxiety disorders.

The most common treatment for insomnia is pharmacologic intervention with benzodiazepine and benzodiazepine agonists. Although these drugs have been consistently argued in studies for increasing sleep time and to reduce sleep latency and onset time, they are associated with strong dependency and withdrawal symptoms and only treat the symptoms in the short term, instead of solving the underlying problem. Thus, pharmacologic intervention is not an effective cure and should not be heavily relied on. Recently, more people have expressed their discomfort and ineffectiveness of pharmacologic intervention, therefore alternate drug-free therapies are being investigated and practiced. Examples of common modalities used in the treatment of insomnia include cognitive behavioral therapy, sleep hygiene education, stimulus control, muscle relaxation, sleep restriction, exercise, and bright light therapy. These treatments have been shown to be more effective in reducing the effects of insomnia in up to 80% of the patients.

How osteopathy can help insomnia

Osteopathy is a non-invasive, drug-free manual “hands-on” therapy founded by Dr. Andrew T. Still. It focuses on every aspect of patient’s body (such as bone, joint, muscles, spine, tendon, nerve and ligament) to provide overall optimal health and to restore correct biomechanics with the use of manual assessment and treatment based on its core principles that

highlight health maintenance. It specifically emphasizes the interrelationship between the function and structure as it has a direct impact on balancing health across all body systems; musculoskeletal, neurological, cardiovascular, visceral and cranial. Hence, osteopathy ensures to improve both physical and mental health which consequently helps patients with their sleep disorders. The benefit of osteopathy treatment is its natural approach that is suitable for any group of people without the concern of side effects.

Osteopathic treatment method

There is a wide range of osteopathic treatment techniques and each specialized treatment techniques can be effectively practiced for insomnia.

1) Soft Tissue Therapy (STT)

It is used to evaluate the condition of tissues, release restrictions, help the body fluids flow smoothly and restore function with use of light or firm, direct pressure to relax hypertonic muscles and myofascial (fibrous tissue) structures which associated with somatic dysfunction. Optimal neuro-vascular flow helps to reduce harmful fluid retention and allows the immune system to work more effectively.

2) Osteopathic Articular Techniques

It is used to reduce muscle spasms, ease neurological irritations, assist in joint mobility and help reduce pain and discomfort by moving two joint surfaces.

3) Muscle Energy Techniques (MET)

It is used to release tension and increase the range of motion by involving the patient flexing a muscle against the practitioner's pressure and then relaxing the muscle.

4) Visceral Manipulation

It is used to treat organs and viscera of the body from the heart, liver, stomach, spleen, kidneys, lungs, pancreas, large and small intestines, bladder to the uterus by moving the structures themselves and releasing the fascia around them to maximize the organ function and improve the organ mobility and neuro-vascular flow. The functioning of the internal organs, or viscera, is intricately linked to the functioning of the body as a whole. Normal structure of the organs, their blood supply, nerve supply and drainage, is essential for healthy function,

5) Cranial Osteopathy

It is used to resolve the restriction in the bones of the cranium for better circulation and nerve function. The brain and spinal cord are covered in three layers of membrane called the meninges (dura), which in turn are protected by the cranium and the spinal cord. This membrane attaches onto the inside of the cranium that following the course of the spinal canal which is attached in few locations, continuously down to the sacrum. This central nervous system controls the functioning of every organ, muscle and nerve in the body. Any change in the shape of the skull will affect this whole mechanism and through into the rest of the body along the connections throughout the neurological system. Likewise,

any alteration in the structure or function in the body will affect the cranial mechanism.

There are many conditions, restrictions and traumas that reflect in the cranial mechanism and that would benefit from treatment such as improving blood supply, respiratory system, and decreasing the pain from muscle, joint or fascia.

The beneficial effects to Insomnia with Osteopathy

Sleep disturbance, such as insomnia, is related to the neurovegetative system and also is common in patients suffering from chronic musculoskeletal pain. Other chronic pain syndromes, such as fibromyalgia, are almost always associated with sleep disturbances and fatigue. Lobbezoo et al (2004) investigated the relationship between health status, sleep disorder, and musculoskeletal pain in the craniomandibular and cervical spine regions. The authors concluded that sleep disorders are frequently found in patients with chronic trigeminocervical pain.

The neurovegetative system

The neurovegetative system manages the automatic functions of organs such as digestion, respiration, coronary circulation and excretion. There are two components of the neurovegetative; parasympathetic system conserves energy as slowing the organs, releasing insulin, and stimulating digestion to help body function relaxed while sympathetic system prepares physical and mental activities as increasing coronary and respiratory activity, and expanding bronchus and pupil.

The spine with peripheral nerves is directly connected to the neurovegetative system.

Figure 2 is included to show how neurovegetative system works. A misalignment of the vertebra can disturb the nervous system to the point of causing insomnia. Osteopath can help to treat the factors of insomnia with specialized techniques in soft tissue and osteopathic articular techniques to release the restriction of body since tenderness and/or tightness in the body gives mixed signals to the neurovegetative system. Specific techniques in manipulating the cranium and sacrum axis can significantly improve mobility of the spine. Cranial osteopathy can improve sleeping patterns due to stress which can cause fatigue, irritability and anxiety.

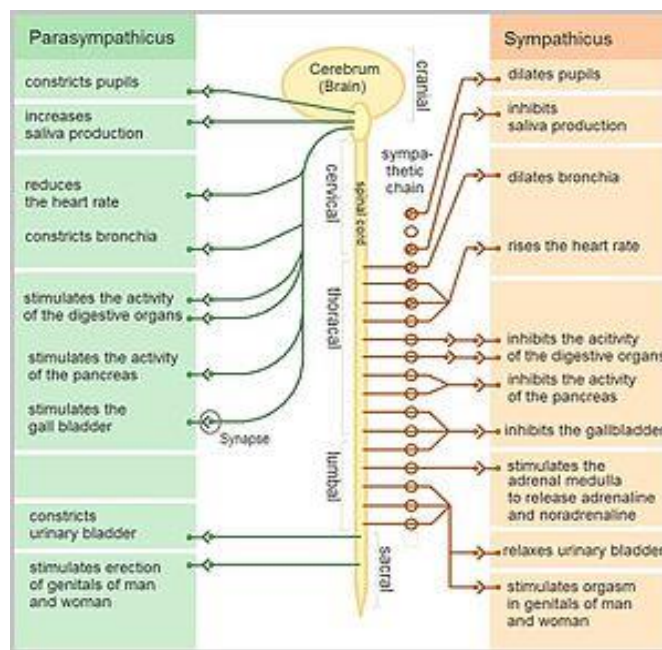


Figure 2 The neurovegetative system

Osteopathy approach is to help create a proper functionality of the vagus nerve or the X cranial nerve which is responsible for both physical and mental wellbeing. Correspondingly, osteopathy can also help create the balance between the parasympathetic and the sympathetic

nervous systems. A balanced neurovegetative system is important to allow the body to rest, improves functionality, reduces overall tension and promotes a deeper sleep.

Conclusion

People who suffer from sleep disorders are significantly increasing in contemporary society, and insomnia is one of the main sleep disorders that many experiences in their lifetime. Insomnia can occur to anyone regardless of their age or gender and due to its unapparent cause, it is hardly treated in a proper manner. Statistics have proven that the majority of people rely on pharmacologic intervention such as benzodiazepine. Despite its beneficial short-term effect, these drugs results in high dependency and are not advised for a long-term use. Since human body structures and functions work collectively and are all interconnected, it is important to find an underlying problem and treat it accordingly. Thus, Osteopathy is advantageous with its various methods to treat patient's overall well-being that allows them a better quality of life without the restrictions nor side effects.

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